HYALOMYODES (DIPTERA; TACHINIDAE), AN ENDOPARASITOID OF TETRIGOIDEA (ORTHOPTERA)

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In the course of morphological studies on members of two families of groundhoppers (Orthoptera, Tetrigodea, Tetrigoidea), one of us (R.T.K.) discovered a single living endoparasitoid dipteran larva (Fig. 1) within the body of a freshly-killed, adult female *Tetrix subulata* (Linnaeus) (Tetrigidae, Tetriginae) which was in process of dissection. The maggot (a phasiine tachinid larva, about 3 mm long) was located in the region of the metathorax and first three abdominal segments. The host had been collected locally, in the vicinity of the Morgan Arboretum, Macdonald College Campus of McGill University, Ste-Anne-de-Bellevue, Quebec, Canada, on 14.x.1984, and was dissected on the following day. A stock of *T. subulata* (as well as other species of Tetrigoidea), originating from the same general vicinity, was, at the time, being maintained at room temperature, in the laboratory and, about a month later (18.xi.1984), two small tachinid flies were found in the rearing cage. As there was no other feasible source, the adult flies had, without doubt, developed from endoparasitoid larvae similar to the one discovered. Judging by the size of the adult flies, that larva would have been about half grown. We are grateful to Dr. B. E. Cooper of the Biosystematics Research Centre, Agriculture Canada, Ottawa, for identifying the adult flies as *Hyalomyodes triangulifer* (Loew).

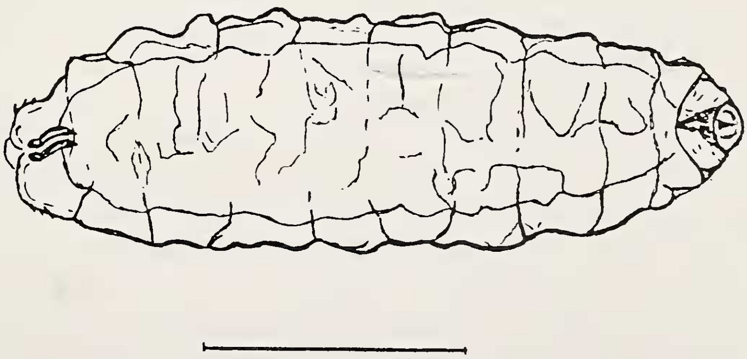

Fig. 1 Half-grown larva of *Hyalomyodes triangulifer* (Loew), ventral, from the body of *Tetrix subulata* (L.). Scale bar = 1mm.

A further single larva, apparently identical with the first, was subsequently obtained from an adult female of *Tetrix ornata ornata* (Say) (Tetrigidae, Tetriginae), collected from the same general area

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as before on 21.iv.1985, but not dissected until 28.vi.1985. Yet another larva was found in a female *Tettigidea lateralis* (Say) (Batrachideidae, Batrachideinae), collected (again from the same area) on 9.vi.1985, and dissected on the same day.

Although, long ago, Hancock (1902) mentioned various predators and an ectoparasitic mite attacking Tetrigoidea, to the best of our knowledge, these are the first records of an endoparasitoid in the Tetrigoidea, which have generally been considered to be remarkably free from such natural enemies.

H. triangulifer (sometimes incorrectly written *"triangulifera"*, and at one time placed in the genus *Clistomorpha* Townsend) belongs to the subfamily Phasiinae (tribe Strongygastrini). Brooks (1942) indicated the general North American distribution then known for the adults. Besides various of the United States, he noted the Canadian provinces of Nova Scotia, New Brunswick, Québec an Ontario in the east and British Columbia in the west, but not the Prairie Provinces, the North, or Newfoundland-Labrador (the last, at that time, not yet part of Canada). The larval stages were described and partially figured by Thompson (1954), who indicated the host insects known at the time (all Coleoptera) and outlined what little else was known or surmised about the biology of *H. triangulifera* [sic]. This included the possible method by which the larva gained access to the body of its host.

Larvae of *H. triangulifer* have been recorded as endoparasitoids of various genera of Coleoptera belonging to the families Alleculidae, Chrysomelidae, Coccinellidae and Curculionidae (usually from adults but sometimes from larvae); the species has also been reported from the larva of a plume moth, *Platyptilia carduidactyla* (Riley) (Lepidoptera, Pterphoridae) in California. References to the various host records are given by Arnaud (1978), but there is none for any species of orthopteroid insect.

A wide host range is apparently not unusual among Phasiinae, and the related *Leucostoma simplex* (Fallén) (Leucostomatini), an endoparasitoid mainly of Heteroptera, is also known from Acrididae (*cf.* Arnaud, 1978). On the other hand, it is conceivable that the record of *H. triangulifer* from a plume moth (Lang, 1950) might refer to another species, and there could perhaps be an element of doubt concerning the precise species involved in the present case. That Tetrigoidea are immune to attack by insect endoparasitoids, however, is manifestly not true.

References

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A PLEA FOR THE RETENTION OF THE OLD COUNTIES IN RECORDING. – The Watson-Praeger county and vice-county system of faunistic recording has proved itself a valuable instrument for most purposes, where smaller divisions may not be required. Among its advantages is that of being readily adaptable to earlier usage based on counties alone, in which the literature abounds; any change, therefore, which upsets this convenient harmony must, from the standpoint of recording, be considered retrograde. I am thinking here, of course, of the Local Government Act of 1972 which altered the names and boundaries of certain English and Welsh counties for administrative reasons. It seems to me that these changes do not in any way forbid the retention of the older system in published records and county lists. (Furthermore, many of us may well object on general grounds to the idea that centuries of history and ingrained tradition may legitimately be swept away overnight by a stroke of the bureaucratic pen.) The inconvenience of having to collate the two systems – even though their differences are not extensive, the chances of errors resulting, and the waste of time involved, are sufficiently obvious. Also, we should spare a thought for future workers whose task will be made onerous enough by all the nomenclatural changes, etc., over a long period, without adding to their confusion from another source. I am glad to see that in practice many recorders do in fact continue to employ the traditional and time-honoured system.

I should like in passing to put in a good word for the county and vice-county symbols, which for some reason seem almost to have dropped out of use in favour of numbers. For many, the latter are meaningless without a key; whereas, in contrast, the symbols are readily understood and memorized, to which end they were in fact devised. – A. A. ALLEN, 49 Montcalm Road, London SW7.

ACROLEPIOPSIS BETULELLA CURTIS (LEP.: YPONOMEUTIDEA) IN ARGYLLSHIRE – The only published localities for recent records of *Acrolepiopsis betulella* are Beinn Eighe NNR, Wester Ross (M. R. Young (1985) *Ent. Gaz.* **36**, 298-9) and Roslin Glen LNR, Midlothian (K. P. Bland (1986) *Ent. Rec.* **98**, 241-3). I have